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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/595,881

05/17/2006

Kazuhiro Yamada

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EXAMINER

THOMAS, BRENT C

ART UNIT

PAPER NUMBER

1795

NOTIFICATION DATE

DELIVERY MODE

01/06/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

sughrue@sughrue.com
PPROCESSING@SUGHRUE.COM
USPTO@SUGHRUE.COM

| | | | |
|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/595,881 | Applicant(s) YAMADA ET AL. | |
| | Examiner BRENT THOMAS | Art Unit 1795 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 3 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/08/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/13/2009 have been fully considered but they are not persuasive. The argument that claim 1 is patentably distinct is not persuasive. In spite of the different production method the prior art membrane would likely exhibit the claimed properties due to its similar structure and materials.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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4. Claims 1, 2, and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koiche et al.

Regarding claim 1, Koiche teaches a composite film (microporous composite membrane) comprising a coating layer made of a porous material (B) polyvinylidene fluoride (porous coating layer) capable of being gelatinized on at least one surface of a polyolefin fine porous film (microporous polyolefin membrane) (see abstract and paragraph [0023]) and that the porous material (B) polyvinylidene fluoride (porous coating layer) has a porous structure with a rod like edge having an opening (cylindrical penetrating pores) (see paragraph [0038]).

Koiche does not teach hexafluoropropylene-vinylidene fluoride copolymer, however this would be an obvious variant of the polyvinylidene fluoride taught by Koiche due to their similar structure. See MPEP 2144.09.

Koiche does not teach the details of the cylindrical pores or the adhesion, however given the similar structure and materials the film of Koiche should exhibit the claimed properties. A reference which is silent about a claimed inventions features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. In re Robertson, 49 USPQ2d 1949 (1999).

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5. Regarding claim 2, Koiche teaches the pores of the porous material/polyvinylidene fluoride have an avg. pore diameter of 2.5 μ m (see table I).
6. Regarding claims 4 and 5, Koiche teaches the composite film (microporous composite membrane) is usable as a separator in a lithium battery (see abstract).
7. Claims 1, 2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamano et al. (U.S. Pat. No. 6,468,698) ("Hamano") in view of Miyamoto et al. (U.S. Pub. 2004/0202928) ("Miyamoto").

Regarding claim 1, Hamano teaches an adhesive resin layer 8 (microporous composite membrane) comprising polyvinylidene fluoride (porous coating layer of a gelable fluororesin) and an ionically conducting polymer compound (microporous polyolefin membrane) incorporated therein (see abstract and column 6, lines 58-65). Hamano teaches that the ionically conducting polymer compound can be polyethylene (microporous polyolefin) (see column 5, lines 14-26). Polyethylene is well known in the art as a polyolefin as evidenced by Miyamoto. Miyamoto teaches a polyolefin resin such as polyethylene used to form an insulating layer (see paragraph [0022]).

Hamano fails to explicitly teach that the coating layer has excellent adhesion, cylindrical penetrating pores, or that the resin layer 8 and the polyolefin are microporous. However, it is the position of the examiner that such properties are inherent, given that both Hamano and the present application use the same materials. A reference which is silent about a claimed inventions features is inherently anticipatory

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if the missing feature is necessarily present in that which is described in the reference.

In re Robertson, 49 USPQ2d 1949 (1999).

Hamano does not teach hexafluoropropylene-vinylidene fluoride copolymer, however this would be an obvious variant of the polyvinylidene fluoride taught by Koiche due to their similar structure. See MPEP 2144.09.

8. Regarding claim 2, Hamano fails to teach the diameter of the penetrating pores of the coating layer are 0.1-50 μ m. However, it is the position of the examiner that such a property is inherent, given that both Hamano and the present application use the same material. A reference which is silent about a claimed inventions features is inherently anticipatory if the missing feature is necessarily present in that which is described in the reference. In re Robertson, 49 USPQ2d 1949 (1999).

9. Regarding claims 4 and 5, Hamano teaches a lithium ion secondary battery having a separator 7 comprised of an adhesive mixture/adhesive resin layer 8 applied to both sides of a porous polypropylene sheet (see abstract; column 8, lines 58-67; and column 9, line 1).

Allowable Subject Matter

10. Claim 6 is allowed.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRENT THOMAS whose telephone number is (571)270-7737. The examiner can normally be reached on Monday - Thursday, 9:00am-6:00pm (est.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PATRICK RYAN can be reached on (571)272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BT

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795